WISCONSIN DEPARTMENT OF ADMINISTRATION

Wisconsin Enterprise Architecture

EA Strategy

DRAFT

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Rationale

Introduction

It is the privilege and responsibility for us, in the State government, to deliver the best possible services for the citizens of the State of Wisconsin. With this sense of responsibility, the State's Chief Information Officer (CIO) has created a vision of a Wisconsin Information Technology system that will support the delivery of these services in the most cost-effective and efficient way.

The State of Wisconsin CIO has embraced the concept of an "extended enterprise within the State of Wisconsin Government as a means of implementing his vision of delivering cost effective and efficient government services. The extended enterprise represents the Executive, Legislative, and Judicial branches of state government, local units of government (e.g., county, city, municipal, school boards, law enforcement) and higher education (the University of Wisconsin system and the Technical College Board). While the Executive branch does not have authority over the IT practices of the judicial and legislative branches, and local units of government, the State CIO invites all members of the extended enterprise to participate for the mutual benefit of all.

To realize his vision, the CIO has launched the Enterprise Architecture (EA) effort as one of the tools to help guide the evolution of the Wisconsin IT System. Emphasizing a close alignment of business and technology, EA will create the framework for linking state business needs with information technology development.

The development and implementation of an EA will require an ongoing commitment by the state. The evolution of new products, technology trends, business trends, and citizen demands will require updates to EA to ensure that data and service remain accessible. It is envisioned that convergence to the EA will evolve over time.

In the light of the statewide strategic initiatives launched by the CIO, it is our belief that EA will play a significant role by providing an effective mechanism for mapping business goals with technology solutions.

Background

Within Wisconsin, all levels of government and public education are making difficult funding choices. For Wisconsin Executive Branch State Agencies, funding with respect to IT in the previous budget was singled out for dramatic reductions. To address the legislated reductions in IT budgets and expenditures, state CIO needed to review IT spending at an enterprise level determine where opportunities existed to reduce expense and gain operational efficiencies.

At that time, the CIO discovered that Wisconsin did not have a formal review process to evaluate IT expenditures, budgets or proposed IT acquisitions utilizing capital finance funding from an enterprise perspective. . The ad hoc decision processes to support IT budgets and expenditures seemed to be unnecessarily expensive, due to a lack of a uniform approach to IT investments. This ad hoc IT budget and investment approach has resulted in the inability to easily share data and IT infrastructure investments between governmental entities from both the vertical (i.e., federal to state to local) and horizontal (i.e., state agency to state agency) perspectives.

The applicability of a consolidated, enterprise-level architecture as a tool to address these problems rapidly became apparent to the CIO. Essentially, an "enterprise architecture" is a business tool that enables government or any large organization to identify opportunities to leverage technology and align IT investments with the business needs of an organization. To enable the development and implementation of an EA for the State of Wisconsin, the CIO appointed a Chief Enterprise Architect, a Lead Technical Architect and chartered the Wisconsin Enterprise Architecture Team.

EA Description

The EA will serve as a foundation framework on which the State of Wisconsin will build a technological infrastructure to facilitate the responsible and expeditious deployment of the State's information assets. The EA will provide high-level guidance for aligning business drivers and architectural requirements with the underlying technological components to meet the vision of the CIO to deliver cost-effective and efficient government services to citizens and businesses within Wisconsin.

Information Technology (IT) portfolio management is a disciplined and structured approach of continuous, repeatable, and easily sustainable processes designed to map business requirements to technology decisions. Using a financial metaphor as the foundation, IT portfolio management enables organizations to categorize, evaluate, prioritize, purchase, and manage technology assets (hardware, software, people) and projects. It also enables organizations to align IT spending (related to these assets and

projects) with current and future business needs to achieve an acceptable balance of risk and reward. IT portfolio management is a significant component of any EA initiative.

An IT portfolio planning and management approach forces organizations to think through the enterprise implications of their IT spending. META Group research consistently finds that, when organizations initially institute a portfolio approach, IT expenditures decline 15 to 20 percent with no significant negative impact.

The EA principles guide the selection, creation, and implementation of technology solutions that meet the needs of the State of Wisconsin. The principles are intentionally designed to be as product/vendor agnostic as possible to maximize current investments in technology, provide a workable transition path to targeted technologies, maintain flexibility, enhance interoperability and sharing, and to promote fair competition.

When fully implemented, the EA will establish a formal process to select, score, evaluate, and determine EA target technologies. Selection of EA target technologies will be based upon EA principles using a balanced scorecard methodology to rank or weight competing target technologies.

Reference models will be developed to frame relationships between business and IT architecture, strategic planning, and ongoing governance.

EA Objectives

The Enterprise Architecture must support many different business objectives. These goals are most visible within the rationale listed under each principle, and fall into several general categories:

- Provide better, more timely services to our constituencies
- Create and maintain an IT environment which is responsive to change
- Ensure that IT investments are sound and produce good returns, taking advantage of available economies of scale
- Improve communications and enhance coordination and sharing of IT infrastructure, application, and data resources within the extended enterprise

The EA will provide more services and better quality services to our constituencies by promoting increased consistency and interoperability among the many information systems within the extended enterprise. The EA will improve the overall quality of systems, allowing more efficient and easier integration, and reducing overall problems for customers. EA will

make inter-agency initiatives easier to justify and implement by making them less complicated and less costly. Finally, employing EA strategies will improve access to data and information for decision-makers.

The EA will assist agencies within the extended enterprise in becoming more responsive to change, not only to the frequent changes in the IT environment, but also, and more importantly, to changes in the overall business environment within which agencies operate. The EA will accomplish this by encouraging improvements in flexibility and adaptability, by reducing complexity, and by causing IT initiatives to be as closely aligned with business goals as possible.

An important objective of the EA is to provide guidance to ensure that the state maximizes its return on IT investments. One way the EA can provide this guidance is by encouraging the move away from narrowly focused investment strategies towards strategies that take into account the broader extended enterprise. To accomplish this, the EA will be used as a tool to reduce redundancy, promote convergence towards common standards, manage the portfolio of applications and infrastructure, and to manage change in the overall IT environment.

Another way the EA can be used is to take advantage of economies of scale. Increasing the use of common infrastructure will create operational economies, as one organization can more easily adopt best practices used in other organizations if those practices are built in support of common infrastructure.

The EA will also help maximize IT investment returns by helping to identify where existing investments can be leveraged, and by helping identify opportunities for reducing the total cost of ownership for IT systems and infrastructure. This also extends to leveraging common acquisition and system development processes.

Finally, perhaps the most important way that the EA will be used is as a communications tool. By providing easy access to technology priorities, the EA will increase understanding of IT directions and strategies. The EA will provide guidance to IT managers, developers, and business areas to use when budgeting, planning, and implementing IT systems. The EA will simplify procurement by providing a common description of the extended enterprise IT environments that can be used in system definitions and for system procurement. By facilitating communications regarding the IT environment, the EA will promote the business objectives of the entire extended enterprise.

Enterprise Architecture Scope

The scope of the enterprise architecture (EA) introduced in this document is set by certain aspects of IT that pertain to it, and by the entities who might use or be affected by EA.

So many of our business functions rely on Information Technology (IT) that it is difficult to imagine how work could be done without it. IT supports the creation of meaningful information at the desktop, transports it through a network, stores it, retrieves it, and manipulates it. IT affects virtually every aspect of daily work routines. Often procurements for non-IT related services include IT requirements. As needs emerge from business units in every branch of government, IT systems and solutions evolve to meet those needs.

EA focuses on applications and infrastructure that support business drivers throughout the enterprise. It is not intended to address everything electronic, such as devices that have no effect on the enterprise.

The State Chief Information Officer has embraced the concept of an extended enterprise within the State of Wisconsin Government. This extended enterprise represents all three branches of State Government. While the Executive branch does not have authority over the IT practices of the judicial and legislative branches, the enterprise architecture model does not recognize that distinction. The State Chief Information Officer invites all branches of government to participate for the mutual benefit of all. Also included in that invitation to participate are local units of government (cities, towns, counties, school boards, planning commissions, etc.) as well as the University of Wisconsin and the Wisconsin Technical College Board. Extended enterprise includes all government bodies in the state of Wisconsin who choose to participate.

Conceptual Architecture

The Conceptual Architecture contains a set of principles that serves as a roadmap for the design and deployment of the Enterprise Architecture within Wisconsin state government. The Conceptual Architecture provides a mechanism by which individual state agencies and local units of government can respond to their unique business needs, using common principles.

An important objective of the Conceptual Architecture is to achieve a balance between agency needs on the one hand and enterprise-wide interests on the other.

This balance will ensure that:

- Agency-specific legislated mandates are not compromised by the development of a shared Enterprise Architecture.
- Technology solutions benefit from the expertise of existing technology domains[1] defined within the State's Information Technology Governance Structure to meet the Enterprise Architectural requirements.

[1] Domains as defined by the State of Wisconsin Information Technology Governance Structure are a broad categorization of technology disciplines that help define technology solutions: Security and Information Privacy, Information, Server, Desktop, Application, Information Technology Management, and Network.

EA Principles

The following set of principles should guide the design and construction of an organization's information systems and technology infrastructure to meet the requirements defined by the enterprise's business architecture. It is intended that these principles be considered as a set, not individually. Single principles should not be taken out of context.

Format

For the reader's convenience, each principle is presented in this format:

- Principle Statement: The goal or directive that should be followed or attained (shown in **black**)
- Context: An optional description that provides additional clarification for the principle statement (shown in **dark red**).
- Rationale: why the principle is included (shown in **green**)
- Implication: benefits or consequences of implementing the principle (shown in **dark blue**)

Architecture Principles

Architecture principles are a foundation for the development of an enterprise architecture (EA). The architecture principles define the spirit of the EA in that they are an attempt to capture the thinking behind it. Principles have a timeless quality because they define a value system. While methodologies frequently change, values as a rule do not.

The architecture principles have been grouped into nine categories of architecture principles:

- Enterprise

  Enterprise principles constitute the rules, constraints, and behaviors that the State of Wisconsin enterprise will abide by in its daily activities. Enterprise principles provide the foundation for the development, implementation, and maintenance of the Enterprise Architecture.

- Management and Organization

  Management and Organization principles relate to how the State of Wisconsin engages its information technology resources to implement the EA. Areas included are planning, decision-making, and execution of information technology activities within the extended enterprise of Wisconsin state government.

- Technology

  Technologies are tools or tool systems by which we transform parts of our environment and extend our human capabilities[2].

- Application Delivery

  Application Delivery principles define how to design and deliver applications; define how applications interrelate and integrate; and promote common presentation standards to facilitate rapid training and implementation of new applications and functions. Good application delivery enables a high level of system integration, reuse of components, and rapid deployment of applications in response to changing business requirements.

- User Interface

  In information technology, the user interface can be described as the total user experience. This may include the aesthetic appearance of the device, response time, and the content that is presented to the user within the context of the user interface.

  User interface principles must address:

  - Equitable Use: Accommodating *all* users in relation to electronic networks. Delivery of services must occur simultaneously for all accessibility needs.
  - Flexibility of Use: Accommodating a wide range of individual preferences and abilities while promoting a degree of standardization and compatibility with various electronic information technologies.
  - Simple and Intuitive Use: Ensuring ease of comprehension and use, regardless of the user's experience, knowledge, language skills, or concentration level.
  - Perceptible Information: Communicating information effectively, regardless of the user's physical and sensory abilities, so that it can be used efficiently and comfortably with a minimum of fatigue.

[2] Tornatzky and Fleischer, 1990.

- Security

  Security principles pertain to all of the safeguards in an information system, including hardware, software, personnel policies, information practice policies, disaster preparedness, and the oversight of all these areas. The purpose of security is to protect both the system and the information it contains from unauthorized external access and from internal misuse. Security must be balanced against the need for access and the rights of citizens to privacy.

- System Management

  System management is the management of the information technology systems in the enterprise. This includes the processes used for purchasing equipment and software, installation, configuration, maintenance (including enhancement and service updates), problem-handling, and determining whether objectives are being met. System management principles also address change management and the need for a common system for problem resolution.

- Data Management

  Data management is the function of controlling the acquisition, analysis, storage, retrieval, and distribution of data. Data management can involve protecting the physical security of data, ensuring that backup and recovery procedures are in place, protecting confidential or private information in data, reducing redundancy in data, and establishing an enterprise data architecture.

- Centers of Excellence

  Within the medical community, “centers of excellence” are used to promote innovative research and development activities. Often these centers of excellence allow one medical facility to specialize in advanced treatment for specific diseases and promote equalization of the high cost of providing medical services to the public among several medical facilities within a single community.

  An information technology center of excellence may be either a stand-alone facility within an Executive branch agency, local unit of government, the University of Wisconsin, or a "virtual" center. A virtual center will be designed within several units of government. Virtual centers will provide cohesive, coordinated flow of matrixed services and programs within specific technical specialties.

Enterprise Guiding Principles

1. Promote a holistic or "whole government" approach while respecting the unique federal, state, and local unit of government roles, legislation, and mandates.

   Rationale
   - To promote a holistic approach will assist all by promoting trust and cooperation throughout the extended enterprise.
   - To reduce redundancy and associated complexity
   - To design IT infrastructure with a "whole government" approach, making its adaptation to facilitate changing government business processes easier and quicker

   Implications
   - Must spend a little more initially to obtain long-term goals, at an overall cost savings.
   - Consistency will make things work better together and ease integration.
   - Must accept that decisions could take longer to make, and solutions could require more time to implement.
   - Agencies and local units of government must occasionally concede their own preferences for the greater benefit of the entire State government. Trust will be critical to success.
   - Must promote a holistic approach will assist all by promoting trust and cooperation throughout the extended enterprise.
   - Must ensure the participation, input, and feedback from all levels of government within the extended enterprise[3].

2. Business requirements and processes must drive the development, adoption, and acceptance of the EA.

   Context
   To ensure the viability of the EA, the EA must accommodate the perspectives of both business and IT stakeholders.

[3] The State Chief Information Officer uses the term "extended enterprise" to refer to all three branches of state government, local units of government (i.e., county, city, municipal, school boards, law enforcement), and higher education (i.e., the University of Wisconsin system and the Technical College Board).

Rationale

- To improve business and business processes through the combined perspective of an IT system
- To promote the change of business processes, in relation to a new technology
- To avoid the costs of implementing technology for technology's sake

Implications

- Requires good communication between business and IT professionals.
- Must interact frequently and at multiple levels, not just at a management level, but throughout the organization.
- IT investments will be customer-focused and aligned with enterprise/business strategic goals.

3. IT systems should be designed for adaptability and flexibility, so they can be responsive to changes arising from legislation, societal needs, or other program modifications.

Rationale

- To enable the infrastructure to support the changes that often occur in business processes within the extended enterprise
- To make infrastructure more adaptable to IT changes and IT market forces
- To enable business process improvement
- To make integration of systems easier, and faster, with less process overhaul
- To enable systems to evolve to meet business needs/changes

Implications

- Systems may initially require more time to design and more systemic thinking as transactions cross traditional system boundaries.
- Must expect higher initial costs, but less costly integration.
- System will have a longer life; therefore, return will be longer for the system.
- A system could be sub-optimal in the short term in order to gain long-term optimization.
- Must define performance metrics for flexibility and adaptability.

4. To ensure fiscal responsibility with respect to information technology (IT), the State of Wisconsin will adopt a formal investment strategy for IT acquisitions.

Context

This investment strategy will clearly articulate the expected life of an IT system. It will consider all phases of an IT system life cycle, including acquisition, support, benefits and associated costs for customers, Wisconsin citizens, regulated entities, other agencies in the extended enterprise, and our business partners.

Rationale

- To lead to higher quality solutions
- To enable improved planning and budget decision-making
- To lead to realistic budgeting
- To lead to appropriate system quality decisions (right-sizing)

Implications

- Requires the development of a formalized investment strategy.
- Requires a biennial budget, annual budget, and capital finance planning, processes, and procedures that quantify, audit, and monitor IT appropriations and expenditures at the agency and enterprise levels.
- Requires all agencies to agree to the use of a common investment model.
- Must consider what will be the actual lifetime of the system.
- Must create methods for linking IT investments to business needs and aligning with the state's strategic goals.
- Must create methods for linking the IT investment strategy to portfolio management and to the strategic planning process.
- Requires more planning and resources to do a formalized investment process.
- Must change the business view of technology to include IT investment strategies.
- Should encourage extended enterprise entities to adopt this same formal investment strategy for IT acquisitions.

5. Convergence towards the EA will be encouraged with timing consistent with investment strategy for the extended enterprise.

Context

Convergence towards the EA will take place as new applications are built, technologies are deployed, and old systems are refreshed or retired. Exceptions to the EA may be endorsed in specific cases, where the benefits of consensus for a specific technology solution outweigh the adoption of the EA.

Rationale

- For EA to be adaptive and to be able to evolve to accommodate changes in business and technology
- To avoid "cold turkey" conversions, which are very expensive
- Convergence over time preserves investment while promoting the benefits of the EA.

Implications

- Delayed convergence can reduce the benefits of the EA.
- Requires a realistic and attainable approach to migration to the EA.
- Requires an explicit transition strategy for existing systems within departments and agencies once a target technology is identified.
- Allows for premature termination of a system, where it makes sense.
- Does not allow for waiting forever.
- Requires a business case for exceptions, an exception process, and an exit strategy.
- Must define temporary or permanent exceptions, and exit strategies for temporary exceptions.
- Requires funding to get out of obsolete technology.

6. The EA may identify more than one target technology solution, as a single solution may not be applicable or feasible in all situations. When more than one target technology solutions is endorsed by the EA, one solution should be designated as the primary target for convergence.

Context

The EA should reflect the desire to achieve convergence within a diverse organization. However, there may be limitations towards convergence of a single solution. Alternatives may be necessary to meet business needs.

Therefore, endorsing primary and secondary technology choices may be necessary to fulfill the business need.

Exceptions to the EA may be endorsed in specific cases, where the benefits of consensus for a specific technology solution outweigh the adoption of the EA. In some cases, a lighter-weight solution may be a primary solution, preferable to an alternative, more robust solution[4].

Rationale

- To reduce technology solutions from many to two or significantly fewer, when a single solution is not feasible
- To avoid forcing higher cost when one size does not fit all
- To reduce complexity but fulfill a business need by using primary and secondary solutions

Implications

- Requires the development of impartial rules and decision criteria to distinguish when unique requirements should take precedence over the government-wide approach.
- Must recognize that it is generally more costly to support two systems rather than one.
- Must recognize that designing a repeatable methodology for endorsing primary and secondary technologies may be difficult.
- Must recognize that migration strategies are more complex when primary and secondary technology choices exist.
- Must focus investment on primary technology choices.
- Need to address the costs to both the business and IT areas.

7. In many cases, the EA will apply to all stakeholders, specifically where there is sharing of data, application architecture, and system integration.

Context

Convergence and adoption of the EA will be guided by a variety of factors, including investment strategy, business needs, and other factors, such as legislation.

[4] For example, take Microsoft Office Professional versus Microsoft Works. MS Professional contains MS Access, but not all users need this application. It may make sense to provide the majority of the users with MS Works and a select minority with MS Office Professional.

Rationale

- To apply the EA throughout the extended enterprise, especially where opportunities for horizontal and vertical integration are identified[5]
- To tie the EA to the business of the extended enterprise
- To have consistent technology integration within the extended enterprise
- To streamline application integration and data sharing
- To reduce costs through economies of scale

Implications

- Must develop business driver/business decision criteria to determine what levels of the EA apply to different stakeholders within the extended enterprise.
- Will reduce costs for local government.
- Will indirectly reduce programmatic operational costs.
- Must broker consensus.
- Must provide opt-out strategies if there are significant costs.
- Realize that potential increased one-time costs may occur to achieve long-term operational reductions.
- Reference models must clarify where EA should apply to all stakeholders.

Management and Organization Principles

1. The management and governance of the EA will be open and transparent to all stakeholders within the extended enterprise.

Context

Governance is a vital and important component in development and management of the EA. Communication needs to be open, honest, frequent, and bi-directional between stakeholders and WEAT.

[5] Horizontal, within the context of government, refers to combining entities or agencies that are engaged in the same line of business or that perform the same type of functional service. This is often referred to as "horizontal integration." Vertical, within the context of government, refers to all levels of governmental hierarchy along a line of business. This is often referred to as "vertical integration." For example, social services are subject to a governmental hierarchy of federal, state, and local units of government.

Rationale

- To engender trust between all parties
- To encourage buy-in from the stakeholders, resulting in faster and more complete adoption of the EA

Implications

- EA must be integrated with other IT governance entities within the extended enterprise.
- Must have buy-in and support from the Business Leadership Council, and from the established working groups and technology domains chartered by the Technology Leadership Council.
- Requires a communication plan that must be followed.
- Open review periods will be built into the EA processes.

2. The processes for selecting technology must be open and transparent.

Context

IT technology decisions must consider business input from stakeholders and be open, transparent, and well documented. This requires allowing time for necessary consideration of issues by stakeholders, technical staff, and management. Once a decision has been reached, unnecessary, unproductive debate should not continue.

Rationale

- To lead to decisions being made in an open manner that will stand up to later scrutiny and audit
- To allow stakeholders and technical staff sufficient opportunity to identify important information regarding potential technology investments
- To ensure that decisions are made according to appropriate investment strategies
- To encourage the necessary analysis of issues without becoming bogged down in details
- To avoid unproductive heckling and back-biting after decisions are made
- To avoid playing favorites with particular vendors or technologies
- To promote a healthy IT culture where the best overall solutions are identified and implemented

Implications

- Decisions must employ and be guided by EA principles
- Decision-making processes must allow ample time and opportunity for productive debate
- Decisions must be well documented so that all parties know when the time for debate has ended

3. Promote formal methods of IT systems engineering.

Context

Systems engineering includes all aspects of IT: application projects, infrastructure projects, and hardware projects. Use accepted systems engineering practices that apply to the design. Domains will identify and document formal processes as they apply to specific domains and will be the process owners.

Rationale

- To lead to measurement points that, in turn, lead to benchmarks
- To enable improved quality assurance
- To enable repeatability and consistency
- To lead to right-sizing

Implications

- Must minimize impacts upon partners.
- Must develop definitions of system engineering processes.
- Must agree on system engineering practices and methods.
- Must develop training in system engineering practices and methods.
- Must identify the formal methods for particular areas of technology.
- Must follow up for quality assurance.
- Must confirm that ROI is what was expected.
- Must use a disciplined, repeatable approach to development.
- Need a resource that will identify and document principles.
- Must use the Capability Maturity Model as a measurement of progress in the application of system engineering principles.[6]
- Domains must develop the formal processes.

[6] A maturity growth model is designed for providers of IT services (e.g., management in hardware, software, operations, and software maintenance).

4. As new contracts and outsourcing agreements are established, these contracts and agreements will reflect and incorporate EA principles.

Context

This is one of the mechanisms by which we keep EA aligned with business. Outsourced work should not lead to exceptions to the EA just because they are outsourced.

Rationale

- To be successful, the EA must be integrated with all facets of IT system design, planning, and acquisition.

Implications

- Requires EA training for non-IT professionals in areas such as procurement.
- Need partnerships and good communications between business program areas, procurement, contract management, and IT organizations to obtain the benefits of EA.
- Must include EA-based requirements when IT procurements are part of non-IT contracts.
- Must change the view of business investments to include IT requirements.
- Must audit IT procurements and provide feedback mechanisms for EA.
- Must include EA-based requirements in procurement documents and contracts.

5. The success of the EA will depend upon consensus and trust among the stakeholders within the extended enterprise.

Rationale

- To have a balance: agencies must be ready to act unselfishly, and the enterprise must mitigate the burdens that solutions impose on agencies.
- To be fair: agencies that bear the costs for major initiatives that benefit the enterprise ought to be compensated in some manner.

Implications

- Achieving consensus may sometimes require recompense to make stakeholders "whole" when they are negatively affected by the implementation of the EA for the greater good of the extended enterprise.
- Must identify what the compensation will be, and how it will be funded and factored into the total cost of the project.
- Must manage costs and benefits so that overall equity is achieved across the extended enterprise.
- The ROI for each project must identify its costs and savings.
- Compensation to an agency acting in an unselfish manner should be factored into the total cost of the project.

6. The EA will promote technology equalization among stakeholders, as not all entities within the extended enterprise are funded at the same level.

Rationale

- Information technology automation often reduces program costs and provides rapid service delivery mechanisms; however, not all new programs have adequate funding for information technology.

Implications

- Must develop funding mechanisms to support this type of initiative.
- Must develop processes to promote cross-agency sharing of technical expertise.
- Must develop processes to ensure state- and federally-legislated program initiatives have adequate funding for information technology.
- Must perform gap analysis to find opportunities for technology equalization.
- Must involve the applicable budget organizations and the Legislature in identifying and establishing new funding mechanisms.

7. Training programs and consulting services must be provided to stakeholders to promote convergence and the effective application of the EA.

Context

Consulting services may take the form of mentoring staff, assisting project teams in defining their business and technical requirements; providing project management guidance; and providing procurement, acquisition, or contract/vendor management support.

Rationale

- Without some type of training, we cannot expect staff to know what EA is, how to apply the EA, what the target technologies are, and how to use them.

Implications

- Requires the development of a comprehensive training program.
- Must foster mentoring.
- Must identify how training and consulting will be funded and managed.

8. The EA should encourage professional development for permanent (FTE) staff.

Rationale

- Staff is our greatest resource.
- To reduce dependence upon long-term contracted staff.

Implications

- Must ensure that funding designated for technical training is not eliminated in times of fiscal crisis.
- Must include professional development plans in annual performance reviews.
- Must make a commitment to staff to provide opportunities for professional growth.
- Must ensure access to cost-competitive training alternatives.
- Must ensure that succession and knowledge transfer plans are developed and implemented for both permanent and contract staff.
- Must have greater opportunities for combined training.

Technology Principles

1. EA technology choices will be based on criteria including extensibility, interoperability, flexibility, adaptability, portability, and appropriate scalability.

   Context
   The principle applies to how we select a target technology for the EA.

   Rationale
   - To more quickly adapt to changing business requirements.
   - EA technology choices will promote the integration of technologies based upon interfaces that utilize open standards where available.

   Implications
   - Criteria for the selection of EA target technologies will require evaluation with respect to extensibility, interoperability, flexibility, adaptability, portability, and scalability.
   - EA technology selections must balance agency versus enterprise interests and needs.

2. Reduce complexity and enable integration as much as possible to realize business process improvements within the extended enterprise.

   Context
   Customization taken too far increases cost and reduces adaptability.

   Rationale
   - Complex application systems with many data and transactional functions are difficult to manage, making change risky.
   - To avoid dependency failures resulting from applications that are tightly coupled
   - To design and implement applications that are accessible, perform well, and account for network and other dependencies

   Implications
   - Must promote and facilitate component-based application development.

- Must keep to a minimum the number of vendors, products, and configurations, allowing for maximum flexibility in implementing changes.
- Must avoid overly complex configurations of components and discourage undue custom tuning, or customization of hardware and software based on transient, local, or other conditions.
- Must maintain configuration discipline, sacrificing performance and functionality in some instances.
- Must account for resource constraints.

3. Support pervasive standards and technologies under appropriate conditions.

Context

Using pervasive standards makes sense if:

- Reliance upon a single vendor is proactively managed
- Market forces are considered
- Cost of a pervasive proprietary standard is balanced with the cost to migrate to an open standard in the future
- The cost to migrate to interfaces that employ open standards is considered

Rationale

- To avoid dependence on weak or under-performing vendors
- To allow the extended enterprise to influence and stay current with industry standards and trends
- To encourage flexibility and adaptability in product replacement
- To avoid dependence on proprietary standards that become isolated

Implications

- Must establish criteria to identify weak or under-performing vendors and products.
- Must assess the architectural fit of proposed solutions.
- Modify work practices and business workflow to increase standards compliance.
- Must manage dependencies on proprietary vendor technologies.

4. In order to maximize integration throughout the extended enterprise, systems should incorporate standards that promote system interoperability.

Context

Where applicable, incorporate best practices based upon open standards, best practices from like organizations, or pervasive standards based upon a vendor's or provider's market position.

Rationale

- To have systems that include application interfaces based upon open standards
- To promote application module reuse
- To support leveraging innovations developed by other extended enterprise entities

Implications

- To avoid reinventing the wheel, must research what is currently within the marketplace and how others approach similar business issues.
- Must define what we consider to be an open standard application interface.
- Must be careful not to constrain innovation.
- Must have a component repository in order to identify opportunities for application module reuse.
- Must look for alternative funding sources that will foster innovation.
- Must write modules that are reusable.

5. Use open source where a sound business case and investment strategy is present.

Rationale

- Open source is a viable alternative to commercial, off-the-shelf technology products and should be considered when making a technology selection.
- Open source applications can provide innovations that are not available in the commercial marketplace.

Implications

- Training and documentation may be limited, thereby increasing costs.
- Product technical support may be limited, thereby increasing costs.
- Must consider whether the migration cost might be high even though initial costs might be low.
- Must consider how well supported a solution is in the industry.

6. Approach the development of systems from a cross-functional, horizontal government perspective and implement systems in such a way that promotes technology reuse.

Rationale

- If government services are thought of at a higher level, systems can be designed with reduced complexity and designed to promote technology reuse.
- To achieve high-efficiency development and to lower costs of support, training, and testing through the creation and reuse of standard elements

Implications

- Requires a different level of abstraction than what government traditionally uses.
- Might run into “turf” issues.
- Might find difficulty funding something from a functional rather than an agency perspective.
- Implementation requires a high degree of communication and integration across the enterprise.
- Must create incentives for participation in the component repository.
- Must make contributions to and use of the component repository easy.

Application Delivery Principles

1. To the extent possible, the integration of the infrastructure must enable the provision of State of Wisconsin information and services to citizens, businesses, and other governments (i.e., municipal, federal, and international).

   Context

   Specifically, the EA will promote horizontal (cross-agency) and vertical (cross-jurisdictional) integration. Extended enterprise services need to be made seamless to Wisconsin citizens and businesses.

   Rationale

   - To offer seamless services by applying information technology to the integration of services
   - To have more consistency, more efficiency, and less redundancy

   Implications

   - Must determine how to fund solutions from functional rather than agency perspectives.
   - Recognize the challenges of integrating data among various levels of government.
   - Need ways to identify redundancies.
   - Need more effective change management.
   - Need portfolio management mechanisms for both vertical and horizontal integration.
   - Must have adequate staffing and support for both horizontal and vertical integration.

2. Support appropriate client delivery channel preferences for accessing government services, including both electronic channels and more traditional channels, such as counter- and US Postal-based services.

   Rationale

   - We cannot assume that a single service delivery channel will reach all constituents.
   - Citizens, businesses, and partners want channels of service delivery from the extended enterprise that suit their individual preferences and circumstances.

- Depending on the nature of the program being delivered, the circumstances of the transaction, and the sensitivity of the information involved, specific services lend themselves to specific channels.
- Multiple delivery channels also protect against having a single point of failure and help ensure that vital services can still be delivered.

Implications

- Clients will be able to access a number of delivery channels.
- IT systems should be designed to be delivery channel independent.
- Must associate cost with the maintenance of multiple service delivery channels.
- Must determine when phase-in and phase-out of a service delivery channel is appropriate.

3. Promote application consolidation, standardization, and integration where significant benefits can be realized through the sharing and reuse of data, information, and applications.

Rationale

- To avoid the creation of additional silos of data and applications.
- To avoid redundant efforts within the extended enterprise.

Implications

- Requires communication and knowledge of activities at the extended enterprise and agency level.
- Requires a shared application portfolio.
- Requires a component repository.

4. Embrace a formal methodology for IT portfolio management within the extended enterprise.

Context

IT portfolio management comprises a number of sub-disciplines, including IT asset management (ITAM), application portfolio management (APM), project portfolio management (PPM), and application component management.

Rationale

- To have an accurate inventory of systems applications and data within the extended enterprise
- To identify opportunities for sharing and reuse
- To strengthen management of IT investments

Implications

- Must view IT portfolio horizontally and vertically for opportunities.

5. Government, as the steward of public funds, needs to balance the desire for new information technology versus the business value of potential investments.

Rationale

- Government has the obligation to use public money in a fiscally responsible manner.

Implications

- Must provide business justification for IT investments.
- New technology projects must be justifiable.

6. The goal for the design and implementation of systems should be adequate technical quality to meet the business requirements, and not excessively more.

Context

Systems should be designed and implemented to be good enough to meet the need, without superfluous features and capabilities, lest more effort be spent on the extra functionality than was required for the necessary functionality. Systems should be designed with sufficient foresight into future use of the system so as to provide adequate flexibility and adaptability to changes.

Rationale

- To avoid unjustified complexity and cost

Implications

- Must determine how to know when a system is good enough.
- May require business process reengineering.
- Requires scope management.

- Must develop a good business case before designing a system.

User Interface Principles

1. Extended enterprise information technology systems must be accessible to all citizens.

Rationale

- The extended enterprise entities have a responsibility to provide services to all citizens and address their specific access requirements.
- To be responsive to the increasing diversity of Wisconsin society

Implications

- Must pursue "universal design" within the context of technology, which includes the design of products, systems, processes, and environments.
- Services must be widely accessible without being cost-prohibitive.
- Must comply as necessary with Section 508 of the Americans with Disabilities Act (ADA).

2. Support appropriate client delivery channel preferences for accessing extended enterprise services.

Context

Systems must be designed with the knowledge and understanding of the population the system will be serving.

Rationale

- To ensure that guidelines for citizen interfaces are not constrained by narrow assumptions about location, language, systems training, or physical and cognitive capabilities

Implications

- Products and services may be accessed in a variety of ways, but must be available to users in a consistent, accessible fashion.
- Strive for a common look and feel, and consistent service, regardless of choice of delivery channel.
- Must comply with standards for privacy and security.

Security Principles

1. IT systems must be implemented in adherence with government security, confidentiality, privacy policies, and laws.

Rationale

- To enhance public trust
- To protect government assets
- To enable compliance with requirements for public funding and grants
- To protect privacy of citizens, businesses, and other partners

Implications

- Must identify, publish, and keep applicable policies current.
- Must periodically audit/follow up on IT systems (e.g., for HIPPA).
- Must formulate minimum standardized security policies.
- Must allot sufficient time and resources for security policy development.
- Must consider indirect implications of security policy (e.g., staffing to perform audits or check for vulnerabilities).

2. Data must be protected against unauthorized access, denial of service, and both malicious and accidental modification.

Context

Data includes paper records, scanned images, printouts, microfiche, as well as digitally stored information. Sensitive and confidential information should not be accidentally provided or published.

Rationale

- To minimize improper use or loss of data, either of which can have serious business and legal consequences
- To minimize security violations, which impair integrity and jeopardize the viability of government
- To limit opportunities for unauthorized access, so that people are less likely to do inappropriate things

Implications

- Must implement approaches/policies to minimize improper use of data.
- Must implement approaches/policies to minimize security violations.
- Must establish follow-up procedures for security alerts.

- Must regularly examine logs and alerts and execute follow-up procedures.
- Must not secure data to the point that responding to open records requests becomes prohibitively expensive.
- Must consider implications of defining an RDA.
- Must design and account for open records requirements in our systems (e.g., open records requirements were not considered when e-mail was first implemented).
- Must provide staffing and resources to perform the functions and duties outlined above.

3. There must be accountability for security, which includes the appropriate design and use of audit functions and system monitoring tools.

Rationale

- To enhance public trust
- To have accountability, there must be auditing
- To avoid data loss or data corruption
- To ensure data is credible
- To identify inappropriate access
- To prevent security breaches, which have harmful and expensive consequences

Implications

- Require monitoring compliance.
- Must design audit functions and cross-checks into systems.
- Must provide resources to monitor. Monitoring is resource-intensive.
- Must define processes for following up if potential security problems are found.

4. A well-defined security policy promotes sharing by removing uncertainty.

Rationale

- To enhance public trust.
- To provide a clearly articulated policy for use of information.

- To prevent destruction of and avoid mishandling of security information (e.g., chain of custody for evidence).

Implications

- Must make security, confidentiality, and privacy requirements clear to designers, developers, etc.
- Additional expenses may be required.
- Need training to comply with policies.
- Must consider implications of defining an RDA.
- Must obtain advice from legal counsel as appropriate.
- Must institute policies that ensure appropriate background checks for staff.
- Must provide education for staff who work with sensitive or confidential information.

System Management Principles

1. IT must plan, design, and construct appropriately for growth and expansion of services across the extended enterprise.

Rationale

- To be more cost effective
- To reduce maintenance costs
- To enable quicker response to growth and change

Implications

- Must make a culture shift towards planning for adaptation (e.g., plan for systems to adapt).
- Must develop processes to collect information and ways to predict growth from historical trends.
- Must promote capacity planning.
- Must recognize the tradeoffs between the increasing high costs of labor and decreasing costs of technology.

2. Formal methodologies for IT change management must be established and followed.

Rationale

- To improve the quality and availability of our systems
- To ensure repeatability and consistency of system management processes

Implications

- Minimizes negative impact upon partners.
- Must agree on practices and methods and follow them.
- Must develop and document well-defined system management processes.
- Must develop a process to monitor for compliance and follow that process.
- Following system management processes may be cumbersome and slower in the beginning.
- System management requires advance planning.

3. Promote the use of common systems for IT problem resolution.

Rationale

- To enable improved quality assurance and system availability
- To enable the development of a knowledge base for problem resolution
- To provide communication to our customers when problems occur

Implications

- Staff must use problem resolution systems.
- Problem resolution systems must be efficient for the staff to use.
- A view of the problem resolution system should be available to customers.
- Must establish and monitor performance metrics for IT problem resolution.
- IT problem resolution has to be more general than would be appropriate for any individual agency. (For example, RMS would need improvements if it were to be an enterprise solution for IT problem management/resolution.)

4. Implemented infrastructure must be robust, responsive, and reliable with appropriate redundancy.

Context

Infrastructure[7] must be appropriately scalable and services must be structured and priced appropriate to the differing needs of agencies. Appropriate redundancy requires balancing the investment made for high availability against the defined business needs (i.e., to seek right-sizing). Robustness means that the infrastructure design must take into consideration likely points of failure and provide backup and redundant components where required.

Rationale

- To adequately protect against system failure while not wasting resources
- An enterprise approach would be the best way to leverage the necessary IT capital investments to ensure high availability.
- To avoid excessive infrastructure and support service costs
- To leverage economies of scale where appropriate

Implications

- Need to consider cost, risks, time redundancy, and the context (e.g., disaster recovery is different from business continuity).
- Must define and discover business requirements for system availability and successfully test against those requirements.

5. Service providers must address and facilitate business continuity, security, and disaster recovery. These services should be provisioned in a manner appropriate to the criticality of the data and applications involved.

Rationale

- The extended enterprise provides many essential services that, especially in times of crisis, must continue to be available upon demand, and recovery must occur within a compressed timeframe.

Implications

- Must identify and prioritize critical business functions.
- Must ensure that communications systems are available, especially in times of crisis.

[7] Infrastructure is the basic framework of an organization or operation. Infrastructure components are units of technology (hardware, software, networks, platforms, etc.) that support the flow and processing of information and determine how the organization functions and how flexible it is to meet future requirements.

- Must define acceptable recovery times.
- Must develop and test disaster recovery and business continuity plans.
- Must periodically review and update test disaster recovery and business continuity plans.
- Must balance costs against risks.
- Must promote awareness in order to provide funding.

Data Management Principles

1. Each individual data item has a single steward or authoritative source, clearly defined locations, and is accessible. Authoritative data must be accessible and available for reuse by any entitled systems or business processes.

Rationale

- Reducing duplication requires that there be an authoritative source for information about that data
- More effective decision-making requires increasing the integrity and relevance of data, which requires having an accurate inventory of where the data is stored.
- Data is a strategic asset that must be shareable and accessible to gain maximum value.

Implications

- Must have time and resources to identify and specify authoritative sources.
- Must establish government-wide procedures to manage data access and ensure data security and integrity.
- Must define stewards and their role.
- Need a consolidated metadata repository for the extended enterprise.

2. Data stored in information repositories within the extended enterprise should be widely available and accessible by all entities within the state extended enterprise, by federal agencies, and by other appropriate partners and entities.

Rationale

- Information that is shared will maximize the effectiveness of business decision-making throughout the government and to external partners.

Implications

- Must create and define standards and processes for unifying data and information management.
- Must establish data warehouses to facilitate information availability for decision making.
- Need a consolidated metadata repository for the extended enterprise.
- Must provide resources to establish and maintain a single metadata repository.
- Must have an access mechanism for information repositories.

3. Data is an asset that must be managed for the benefit of the extended enterprise. Data must be shared to the maximum degree possible, without jeopardizing security and confidentiality.

Rationale

- The value of information is not always realized when it remains in isolated pockets.
- Required security and privacy cannot be sacrificed and may sometimes result in the inability to publicly share information.

Implications

- Must restructure data for easy access and management.
- Must organize business systems and databases according to subject matter, not by department, division, or unit.
- Must maintain data in its most appropriate format.
- Can share data by integrating systems rather than by sharing data directly.
- Data warehouses must be multimedia-capable to access and manipulate all forms of data stored in them.
- Must design network infrastructure to efficiently and cost-effectively transmit all forms of data adequately to meet business and performance requirements.
- Must make data and applications accessible via a variety of media.

4. Data is collected, protected, and maintained in accordance with appropriate standards and guidelines.

Rationale

- The extended enterprise must comply with applicable policies, statutes, and federal requirements (e.g., HAVA).
- Data is more likely to be shared when the standards and guidelines for sharing and protecting that data are documented and understood.

Implications

- Must provide training and education so that individuals are aware of standards.
- Must have communication plan to build awareness.
- Must define and document the appropriate standards and guidelines.

5. Records in electronic format must be preserved and maintained, and remain accessible for their designated retention period.

Context

Records must be appropriately disposed of once the designated retention period has expired.

Rationale

- Proper record maintenance is statutorily required.
- Keeping records longer than required is costly and wastes space and resources.

Implications

- Must provide resources for records identification and disposition.
- Must establish policies for record retention.
- Must establish systems to automate the record retention processes.
- Must establish an audit process.
- Must establish a process to destroy records in an appropriate manner.
- Must define and implement a process for monitoring records handling.
- Must create a communications plan to promote awareness of policies for records retention and disposition.

Center of Excellence Principles

1. The EA will promote organizational diversity and virtual organizations such as centers of excellence.

Context

The EA will encourage the extended enterprise entities to develop, promote, and make effective use of existing centers of excellence within the extended enterprise. The products and services provided by virtual centers of excellence are dependent on innovation and must be strongly customer based. Centers of excellence are not intended to be "for profit" revenue-generating centers.

Rationale

- A shared approach to services and infrastructure[8] is the best way to leverage IT capital investments. This eliminates duplicate infrastructure and support services, and leverages economies of scale where appropriate.
- It is important to keep technology staff well-versed in business problems and requirements, which requires frequent interaction between technology staff and agency business staff.

Implications

- The Division of Enterprise Technology must work with government, university, and industry partners to develop brokering agreements for services via centers of excellence and to develop service rate structures. This will support the delivery of services within centers of excellence.
- Must structure and manage virtual centers of excellence in such a way that they are seen by their customers as identifiable and complete organizations (i.e., each center as a single cohesive unit to its customers) that provide for customer satisfaction, reduced time to market, and adaptability to changes in the surrounding environment.
- Those providing services[9] either as stand-alone or virtual centers of excellence must be responsive to their stakeholders' business needs.
- Must establish and define performance metrics for center of excellence operational maturity.

[8] Infrastructure is the basic framework of an organization or operation. Infrastructure components are units of technology (hardware, software, networks, platforms, etc.) that support the flow and processing of information and determine how the organization functions and how flexible it is to meet future requirements.
[9] Applications or infrastructure may be provided internally through Division of Enterprise Technology enterprise services or through a center of excellence.

- Must provide resources to support the centers of excellence until they attain operational maturity.
- The Division of Enterprise Technology must provide brokering services to prioritize, facilitate, and support the growth of centers of excellence.[10]

2. Facilitate change, encourage IT research and development, and promote integrating new technologies within the extended enterprise.

Context

IT is a rapidly and continually evolving field.

Rationale

- Centers of excellence will promote efficient innovation in specific, specialized technologies.

Implications

- Must have grant writing, management support, and base funding to develop innovative technologies within centers of excellence.
- IT governance bodies must identify and prioritize which emerging technologies require further investigation.
- Must adequately fund ongoing research, development, and testing of new and emerging technologies.
- Must provide to the enterprise with sufficiently knowledgeable staff and resources (e.g., laboratory facilities) to investigate emerging technologies.
- Must establish an extended enterprise test laboratory for systems integration and interoperability testing.

[10] A broker in the virtual center of excellence context is the facilitating mechanism to identify and allocate the appropriate resources to fulfill a client demand. The broker will serve as the mechanism supporting the required customer services, the selection of resources, and the creation and management of the workflow.

Wisconsin Enterprise Architecture Team Charter

Committee Name

Wisconsin Enterprise Architecture Team (WEAT)

Background

Within Wisconsin, all levels of government and public education, hereafter referred to as the extended enterprise[i] are making difficult funding choices. For Wisconsin Executive branch state agencies, funding with respect to information technology has been singled out for dramatic reductions. Yet, we must deliver improved services to citizens, integrate services and reduce duplicative infrastructures. Given this environment, it is an opportune time to use enterprise architecture as a tool to reduce costs through shared infrastructure and services, to improve application and data interoperability, and to improve service delivery to citizens and enhance the operational efficiency of state government.

Purpose of Enterprise Architecture

An enterprise architecture (EA) is a business tool that enables government or any large organization to identify opportunities to leverage technology, integrate islands of information[ii], and reduce redundant administrative processes that limit the value of information technology (IT) investments within the extended enterprise.

Within the State of Wisconsin, the development, implementation, and maintenance of an EA will facilitate horizontal[iii] and vertical[iv] integration of IT resources. The EA will promote alignment of enterprise IT to agencies'[v] business missions and program performance. As a result of the extended enterprise EA, IT will become more citizen-centered, customer-focused, and will maximize technology investments to better achieve the state's business goals.

The State of Wisconsin EA is designed to include a set of high-level architecture models that will assist in identifying redundancies, and promote sharing and reuse of technology. Key principles driving the development, implementation, and maintenance of the EA are flexibility, adaptability, and interoperability[vi].

The State of Wisconsin EA is intended to provide a base upon which enterprise and agency IT architectures are designed. The EA is intended to be used by the extended enterprise to facilitate the development and construction of agency architectures. In turn, agency business requirements and business case development will help develop future iterations of the EA.

Committee Purpose

Chapter 22 of the Wisconsin State Statutes, establishes the authority of the State's CIO for enterprise information technology. The Chief Information Officer (CIO) of the State of Wisconsin has chartered the Wisconsin Enterprise Architecture Team (WEAT) as a committee within the State of Wisconsin IT Governance Structure.

By chartering WEAT, the State CIO delegates authority for the development of the strategic direction of EA to the CEA, Lead Technology Architect, and WEAT. WEAT is responsible for supporting the development, implementation, and maintenance of an EA within the extended enterprise of Wisconsin State government.

WEAT is also responsible for developing the EA, including associated technology and supporting processes. In this capacity, WEAT will

- Utilize extended enterprise entities' strategic IT plans and other sources of information, to keep abreast of their business and technology requirements.
- Establish and maintain the EA to support extended enterprise business and technology requirements.
- Ensure that the EA is documented and communicated in accordance with established State IT Governance protocols.

Specifically, WEAT is responsible for all recommendations relating to EA issues as identified in this charter. WEAT is delegated the authority to make recommendations within the EA areas of responsibility that do not require the allocation of funding or resources from any other State entity or partner.

Committee Members

To lead WEAT, the CIO has created the following positions within the Department of Administration (DOA), Division of Enterprise Technology (DET):

Chief Enterprise Architect (CEA)

- Serves as the WEAT chairperson.
- Communicates enterprise requirements and strategies to WEAT.

- Tracks activities and documentation relating to working groups chartered by WEAT.
- Channels CIO priorities and assignments to supporting workgroups and stakeholders.
- Ensures alignment of WEAT activities with CIO goals and objectives.
- Ensures alignment of WEAT activities with the TLC and BLC goals and objectives.
- Ensures alignment of WEAT activities with TLC Domain Managers, Domain Co-Chairs, and Members of TLC Domains.

Lead Technical Enterprise Architect

- Serves as the WEAT Co-Chair.
- Serves as the technical lead for the CEA and assists the CEA in the development of the EA.
- Communicates the technical direction of the EA to the DET Bureau of Development and Operations.

Enterprise Architect Representing University of Wisconsin-Madison

Enterprise Architect Representing Local Units of Government

Enterprise Architect Representing Large State Agencies

Enterprise Architect Representing Small State Agencies

For other members of WEAT, the CIO has appointed architectural representatives to meet the diverse needs of Executive branch agencies, local units of government, and the University of Wisconsin-Madison. These representatives are responsible for:

- Communicating requirements for Executive branch state agencies, the University of Wisconsin–Madison, and local units of government to WEAT, and communicating WEAT activities back to their respective organizations.
- Acting as liaisons with entities not represented on WEAT to ensure that their requirements are considered by WEAT.

Support Staff

Support staff may be appointed by DOA-DET. Support staff will act in an advisory, non-voting capacity.

Support staff are responsible for:

- Scheduling WEAT meetings and distributing meeting materials.
- Drafting WEAT meeting minutes.
- Drafting WEAT working documents, as requested.
- Maintaining WEAT documents on the WEAT Web site.

Other Resources

Consultants as well as staff from organizations within the extended enterprise may be requested and assigned to advisory, non-voting roles as required by WEAT.

Areas of Responsibility

Governance

The relationships between WEAT and the Technology Leadership Council (TLC), Business Leadership Council (BLC), and domains are shown in Figure 1.

- Recommendations requiring the allocation of resources are not delegated to WEAT; however, recommendations for resource allocation or reallocation may be made by WEAT to the State CIO and the TLC.
- WEAT may request direction from the BLC or TLC. WEAT does not require prior approval of the BLC or TLC to proceed with making or implementing recommendations, following the open review period, where resource reallocations are not necessary.
- The CEA will keep the CIO, BLC, and TLC informed of WEAT activities.
- Issues unresolved by WEAT's recommendation-making process will be forwarded to the CIO for resolution.

WEAT is responsible for the development, implementation, administration, and maintenance of an EA for the extended enterprise. This includes:

- Creating a process for providing strategic direction, evaluation, prioritization and collaboration with respect to technology, in conjunction with appropriate IT governance bodies.
- Creating temporary and standing work groups, using established IT governance structures when possible, to advise WEAT and to implement the strategic directions established by WEAT, assist in developing and implementing strategic directions established by WEAT.

- Ensuring that the EA is managed in a manner consistent with the strategic direction established by the State's CIO, IT governance bodies, and the federal government.
- Resolving conflicts that arise between an entity's proposed technology selection and the EA.
- Recommending the development of new enterprise processes to support the implementation and maintenance of the EA.
- Recommending processes to provide accountability and measure the value of the EA.
- Making recommendations, when appropriate, for statutory or administrative rule modifications to support the implementation and maintenance of the EA.

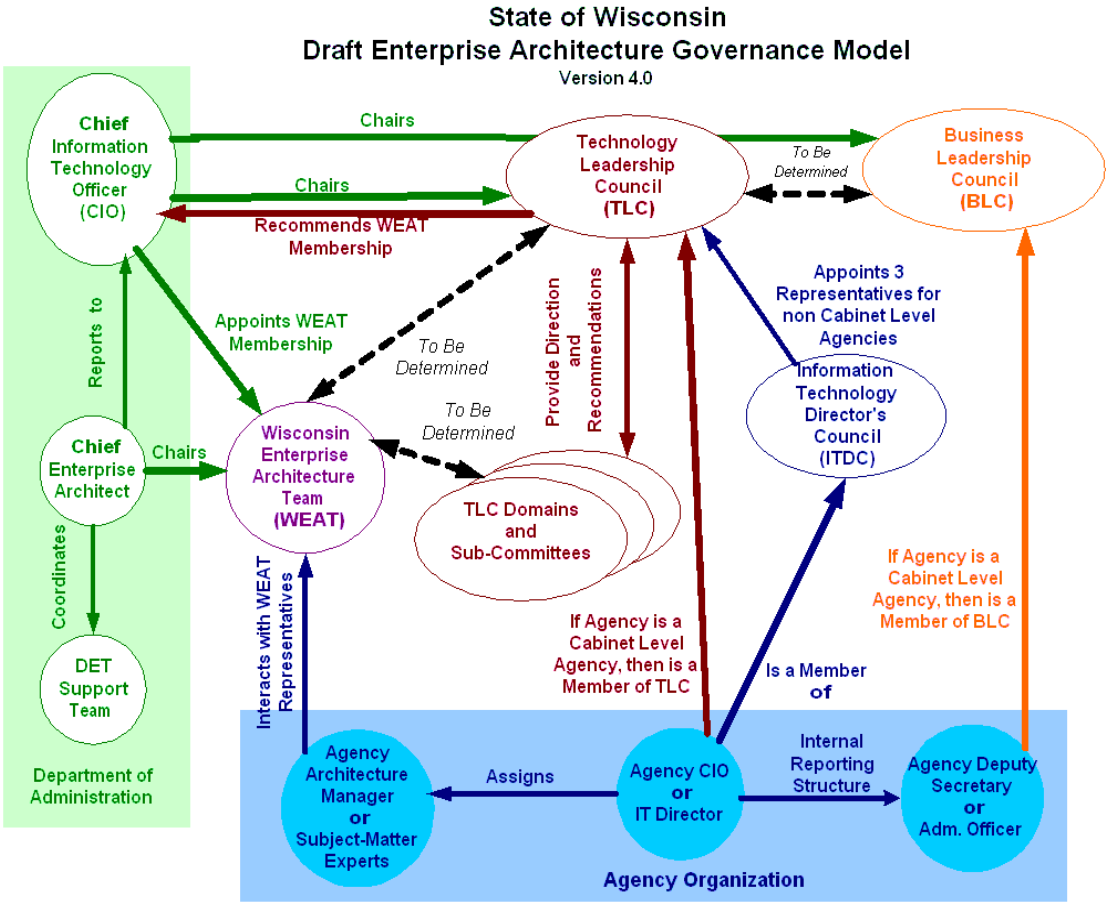

Figure 1. EA Governance Relationships

Implementation

WEAT, in conjunction with the support team, will work with IT Governance to implement EA strategies, standards, policies, processes, and performance measures. In this capacity, WEAT provides recommendations to the CIO, CEA, the TLC, and guidance to the project teams that WEAT establishes for this purpose.

A business plan written by WEAT describes the phases of work building the enterprise architecture, the tasks assigned to WEAT, and the deliverables that will result, participant responsibilities, costs, and schedule.

WEAT will develop a communications and training program to support the development and implementation of the EA.

Funding

WEAT keeps the CIO and TLC apprised of EA-related costs and makes recommendations to the CIO for cost recovery. WEAT is responsible for reviewing applicable funding mechanisms, grant applications, or other cost-sharing options and reviewing rate methodologies for EA services.

In defining the above areas of responsibility, it is not the role of WEAT to direct the management of the daily operations of any state agency. However, it is expected that Executive branch state agencies will align their EA activities with the strategies, policies, and standards established by the CIO, CEA, and WEAT.

Duration

WEAT is a committee authorized by the State CIO. The charter may be revoked or amended by the CIO or when requested by WEAT.

Meetings and Meeting Structure

Meetings are called by the Chief Enterprise Architect based on the express needs of the State CIO and members and of the BLC and TLC.

- At least one meeting will be called monthly.
- WEAT support staff will take meeting notes and record meeting minutes.

Recommendation-Making Process

WEAT will identify the processes for:

- Maintaining the EA documents, processes, and reference models.
- Deciding where and when to change the architecture reference model.
- Scoring technology choices within the architecture reference models.
- Developing and maintaining conceptual architecture.

To the extent possible, actions of WEAT will be based on consensus of its members. When consensus cannot be reached, actions by WEAT will require an affirmative vote from a two-thirds majority of voting members present at a WEAT meeting. A member may vote by teleconference if unable to attend a meeting in person.

- WEAT may elect to vote on issues between meetings via e-mail. An affirmative vote from a two-thirds majority by the published deadline is required for passage.
- Voting does not include those serving in an advisory capacity.
- Silence on a decision (no vote registered) indicates support of the proposal being voted on.
- Actions that cannot be resolved by a two-thirds majority will be taken to the State CIO, if appropriate, for resolution.
- Each WEAT member has one vote.

Voting procedures shall be consistent with the TLC Subcommittee Governance Protocol. The guiding principles, in priority order, for participant voting are:

- To gain the maximum utility, cost-benefit, and performance value and efficiency of the enterprise information domain in supporting state, local government, and their partners' business requirements
- To consider the impact on the State's e-Business network and all participating agencies
- To consider the impact on the representative's agencies
- To refrain from managing the ongoing operations of any other agency, except when in an advisory capacity at the request of an agency.

Changes to the Charter and Incorporation by Reference

Changes to the WEAT charter require a two-thirds majority vote of the membership present at a WEAT meeting, and approval by the State CIO and TLC. The CIO can also decide to change the charter. The TLC Subcommittee Governance Protocol is incorporated by reference into the WEAT Committee charter.

Current WEAT Membership

The following agencies have voting member status on the WEAT Committee:

- Chief Enterprise Architect—Ben Banks (appointed by the State CIO)
- Lead Technical Enterprise Architect—George Ross (appointed by the State CIO)
- Enterprise Architect—Keith Hazelton (University of Wisconsin-Madison, representing University of Wisconsin-Madison)
- Enterprise Architect—Bud Borja (Milwaukee Co., representing the needs of local units of government)
- Enterprise Architect—Jay Jaeger (DOT, representing the needs of large state agencies)
- Enterprise Architect—Judy Heil (DATCP, representing the needs of small state agencies)

Advisory Status participants: To Be Determined

Division of Enterprise Technology Support Staff: Patricia Carlson, Chrystal Catherman, Dan Proud, and Chris Alberts

Notes

[i] The State of Wisconsin Chief Information Officer uses the term "extended enterprise" to refer to all three branches of state government (i.e., Executive, Legislative and Judicial), local units of government (i.e., county, city, municipal, school boards, law enforcement) and higher education (i.e., University of Wisconsin System and the Technical College Board).

[ii] The first mention of the term "island of information" was in a 1986 paper by Barry Devlin and Paul Murphy in the *IBM Systems Journal*. This paper discussed that soft

factors actually create the most insidious barriers to efficient and coherent integration of data. Because of the physical isolation of these “islands of information,” the "languages" of data diverged just like after the fall of the Tower of Babel. Each business tribe used different coding schemes to delineate their facts. This paper influenced early data warehouse pioneers in the 1980’s. These pioneers argued that a data warehouse is more than a pool of data. It is an environment where data can be integrated in a more automated fashion and where integrity of the results is the most crucial factor.

[iii] Horizontal as applied within the context of government refers to combining entities or agencies, which are engaged in the same line of business or performing the same type of functional service. This is often referred to as “horizontal integration.”

[iv] Vertical as applied within the context of government refers to all levels of governmental hierarchy along a line of business. This is often referred to as “vertical integration.” For example, social services are subject to a governmental hierarchy of federal, state, and local units of government.

[v] Agency as defined within the context of government refers to a specialized unit of government within the extended architecture.

[vi] The EA principles are further articulated in “The State of Wisconsin Enterprise Architecture – Conceptual Architecture.” The principles defined within this document ensure that the EA will be able to grow and change to respond to changes within the business environment of Wisconsin State government. This document will be updated on an as needed basis to ensure that the principles guiding the development, implementation and maintenance of the EA are relevant and reflect the context of Wisconsin State government.